

Claims

We claim:

1. A wireless system comprising:
 - a mobile user device that is programmable so that it can be associated with multiple user profiles; and
 - a controller coupled to service sessions between the mobile user device and one or more gateways and servers that handle wireless requests, wherein controller allows the user to change from a first user profile to a second user profile within a session via selections made on the mobile user device without requiring termination of the session, which results in switching the data traffic of the mobile device from one wireless gateway to another wireless gateway.
2. The system of claim 1 wherein a user profile contains at least a unique WAP gateway IP address, NAS (Network Access Server) dialup number, and user.
3. The system of claim 1 wherein the changing of a user profile results in changing a gateway with which the mobile user device is communicating in order to communicate with multiple gateways in parallel.
4. A wireless system for processing wireless requests, the system comprising:
 - a controller coupled to service sessions between the mobile user device and one or more wireless gateways and servers that handle wireless requests; and
 - a service selection management program coupled to the controller, wherein the controller provides service selection information to the service selection management program and the service selection

9 management program communicates with the mobile user device
 10 to allow service selections to be dynamically changed while a
 11 wireless session is being conducted, and wherein subscriber
 12 identifiers and other parameters are placed into the wireless
 13 request to identify the changing service requirements.

1 5. The system of claim 4 wherein the wireless device identifiers set user
 2 security levels for wireless data transmissions.

1 6. A wireless system for processing wireless requests, the system
 2 comprising:
 3 a controller coupled to service sessions between the mobile user device
 4 and one or more wireless gateways and servers that handle
 5 wireless requests; and
 6 a service selection management program coupled to the controller,
 7 wherein the controller provides service selection information to the
 8 service selection management program to allow the operator to
 9 dynamically establish differentiated revenue models with tiered
 10 services based on one or more of a geo-position of the mobile user
 11 device, data packet quality of service (QoS), transport security
 12 settings, network loading or prioritized resource utilization levels.

1 7. A wireless system comprising:
 2 a controller coupled to service sessions between the mobile user device
 3 and one or more Wireless gateways and servers that handle
 4 wireless requests;
 5 a plurality of wireless gateways and servers that handle wireless requests
 6 that are connected between the controller and the one or more web
 7 servers wherein the gateway is chosen dynamically by the mobile
 8 user device and end-to-end security of wireless sessions are

9 improved by providing WTLS traffic to the wireless gateway located
10 behind an enterprise firewall.

1 8. A wireless system for processing wireless requests, the system
2 comprising:
3 a controller coupled to service sessions between the mobile user device
4 and one or more servers that handle wireless requests;
5 a service selection management program coupled to the controller; and
6 a plurality of wireless gateways that handle wireless requests and are
7 connected between the controller and the one or more servers
8 wherein the service selection management program monitors
9 information associated with a wireless session to determine
10 selectively which wireless gateway is to process that wireless
11 session.

1 9. The system of claim 8 wherein the service selection management program
2 is capable of intelligent service-dependent routing of WAP traffic based on
3 mobile user device roaming, mobile user device location, user
4 identification, or WAP service selection.

1 10. The system of claim 8 wherein the system inserts a subscriber identifier in
2 all non-WTLS WAP requests.

1 11. The system of claim 8 wherein a plurality of the wireless gateways are
2 enabled in parallel to each other to process a request from mobile user
3 device.

1 12. A wireless system using a routing table, the routing table comprising:
2 a table of table entries stored in memory within the system;
3 each table entry within the table being capable of pointing to one or more
4 routing entries; and

5 one or more routing entries coupled to one or more table entries, wherein
 6 each routing entry contains one or more of: a device address and
 7 port, a gateway address, a subscriber ID, a quality of service
 8 parameter, an assigned proxy port and charging parameters.

1 13. The system of claim 12 wherein each routing entry contains all of: a
 2 device address and port, a gateway address, a subscriber ID, a quality of
 3 service parameter, an assigned proxy port and charging parameters
 4 ordered linked list; hash table.

1 14. The system of claim 12 wherein the table is a hash table and the routing
 2 entries are connected as a serial ordered linked lists when more than one
 3 routing entry is associated with a single table entry.

1 15. The system of claim 12 wherein a wireless device user can dynamically
 2 change one or more of the entries of their routing entry while in session.

1 16. The system of claim 12 wherein the routing table represents a mapping of
 2 the subscriber to a current WAP gateway of choice wherein that WAP
 3 gateway may be changed by changing information in the routing table.

1 17. The system of claim 12 wherein the routing table represents the service
 2 profile or service level associated with a WAP gateway and a subscriber's
 3 individual security and priority profile/level wherein this information may be
 4 dynamically changed by the subscriber.

1 18. A wireless system having a controller, the controller comprising:
 2 an input routine for receiving information from a wireless device;
 3 worker threads for processing requests received through the input routine
 4 and either obtaining data from external gateways in response to the

requests or providing requests to a service management module to process service selection for the wireless device;

a routing table for use by the worker threads when processing requests;

and

drive page threads for providing data back to wireless devices in response to processed requests.

19. The system of claim 18 wherein data within memory and associated with each wireless device may be changed so that some of the wireless devices are associated with a variety of payment schemes.

20. The system of claim 18 wherein data within the system for each wireless device may be changed so that some of the wireless devices access a first gateway while other wireless devices access a second gateway.

21. The system of claim 18 wherein service choices for a wireless device may be made on demand by changing information within the routing table.

22. The system of claim 18 wherein each wireless device is assigned a unique identifier in the routing table and dynamic services may be selected and changed using that unique identifier.

23. A method to support consistent parameters and service settings while roaming within a wireless system, the method comprising:

- fixing a static IP address within a mobile device;
- receiving, in a foreign network, a request from the mobile device where the request is associated with the static IP address;
- forwarding the request from the foreign network to a wireless gateway within the home network using the static IP address; and
- processing, within the home network, the request using parameters and service settings stored within the home network.